

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 08-025753

(43)Date of publication of application : 30.01.1996

(51)Int.Cl.

B41J 25/312

B41J 25/316

B41J 2/32

B41J 11/14

B41J 32/00

(21)Application number : 06-165264

(71)Applicant : BROTHER IND LTD

(22)Date of filing : 18.07.1994

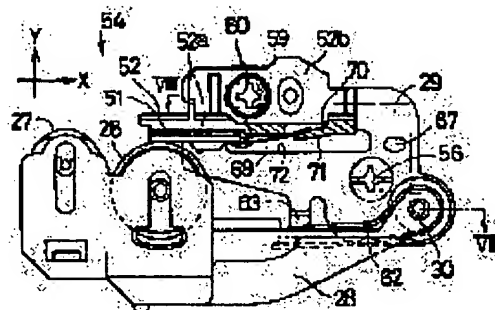
(72)Inventor : TAKENAKA YUICHI

## (54) HEAD SUPPORT FOR TAPE PRINTER

## (57)Abstract:

**PURPOSE:** To facilitate adjustment between a heat-generating element of a thermal head for printing a tap and a position of a platen to be pressed against the heat-generating element.

**CONSTITUTION:** A head support is constructed in such a way that a head support member 52 provided with a thermal head 51 is, after its position being adjusted in advance, mounted to a base plate 29 having thereon a holder shaft 30 provided upright for rotatably supporting a platen holder 28 provided with a platen 26 which is engaged with and disengaged from a heat-generating element of the thermal head 51 for printing a tape, and that the base plate 29 is tightly fixed with a tightening screw 56 to a frame of a containing part of a cassette storing at least the tape for printing.



## LEGAL STATUS

[Date of request for examination]

18.07.2001

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

**\* NOTICES \***

**Japan Patent Office is not responsible for any damages caused by the use of this translation.**

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

**CLAIMS**

---

[Claim(s)]

[Claim 1] Printing section means for supporting in a printing tape listing device characterized by \*\*\*\*\* so that may carry out centering control of the head supporter material by which a substrate which set up a holder shaft for carrying out rotatable support of the platen holder characterized by providing the following was equipped with said thermal head beforehand, it may be attached, said substrate may be \*\*\*\*ed on a frame and secure-closing immobilization may be carried out A conveyance means of a tape for printing to a frame of a stowage of a cassette which stored a tape for printing at least A thermal head for printing on this tape It sets to a printing tape listing device which comes to have a platen which attaches and detaches to a heater element of this thermal head, and is said platen.

---

[Translation done.]

## \* NOTICES \*

Japan Patent Office is not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

## DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] The tape printer equipped with the printing section and the platen which were equipped with the thermal head for the cassette which stored the tape for printing at least, and the tape conveyance means is equipped with this invention free [ attachment and detachment ], and it relates to the structure of the printing section means for supporting in the printing tape listing device for printing images, such as an alphabetic character and a graphic form, according to the data beforehand inputted into said tape.

[0002]

[Description of the Prior Art] These people proposed the printing tape listing device in JP,5-92650,A for labeling etc. previously. This equipment the cassette which stored the tape and ink ribbon for printing which is printed media It constitutes so that the cassette stowage in a printing tape listing device can be equipped free [ attachment and detachment ]. In this cassette stowage The printing section equipped with the thermal head, and the platen of the shape of a roller which attaches and detaches in this printing section, [ while pulling out a tape at speed suitably from a cassette based on the data which was equipped with the rolling-up means of said ink ribbon etc., and was beforehand inputted into the printing tape listing device ] Images, such as a character string, are printed on the tape concerned, and it had tape cutting equipment for cutting a tape [ finishing / printing ] to predetermined length.

[0003] And said printing section \*\*\*\*s and carries out the stop of the bottom plate section in side view [ of L characters ]-like head supporter material to the upper surface of the plate-like frame in said cassette stowage, stretches a thermal head with adhesives in the front face of perpendicular Itabe of this head supporter material, and it is constituted so that it may be arranged in the shape of [ to which the upper surface of said frame and the heater element of the shape of 1 train of a thermal head cross at right angles ] a perpendicular.

[0004] On the other hand, the pivot set up from the frame in a cassette stowage was equipped with the end face of the platen holder which supports said platen rotatable, and it was constituted so that it might press toward the one train band-like heater element of the thermal head in said printing section through a roller release tongue and a roller release rod.

[0005]

[Problem(s) to be Solved by the Invention] However, there were following un-arranging with the configuration of above conventional equipment. That is, that the pressure welding of the circumference side of a roller-like platen should be carried out, the fitting location of head supporter material needed to be fine-adjusted to the frame, it needed to put firmly on on the screw, and there was a problem of taking time in this accommodation so that the tape and ink ribbon for printing might be pressed by the center (center of the heater element width of face of said direction of a train, and the direction which intersects perpendicularly) crosswise [ of the heater element of the shape of a single tier in said thermal head When it carried out [ damage / especially / a thermal head ] and having been exchanged said whole head supporter material, this centering-control activity had to be done on the spot, and it was delayed very much.

[0006] The invention in this application is made that the aforementioned problem should be solved, and aims to let centering control offer the printing section means for supporting in a printing tape listing device it enabled it to perform simply.

[0007]

[Means for Solving the Problem] In order to attain said purpose, printing section means for supporting in a printing tape listing device of invention according to claim 1 On a frame of a stowage of a cassette which stored a tape for printing at least, a conveyance means of a tape for printing, In a printing tape listing device which comes to have a thermal head for printing on this tape, and a platen which attaches and detaches to a heater element of this thermal head Centering control

of the head supporter material by which a substrate which set up a holder shaft for carrying out rotatable support of the platen holder with which it had said platen was equipped with said thermal head is carried out beforehand, and it is attached, and it constitutes so that said substrate may be \*\*\*\*\*ed on a frame and secure-closing immobilization may be carried out.

[0008]

[Example] Next, the example which materialized this invention is explained. Drawing 1 shows the outline perspective diagram of the printing tape listing device 1, and the stowage 5 for containing the cassette 4 mentioned later, enabling free attachment and detachment is established in it free [ closing motion of the wrap covering object 6 ] at the upper surface 1 side of the case 3 when fitting into the bottom case 2 in the printing tape listing device 1. Both the vertical cases 3 and 2 and the covering object 6 are the injection-molded products made of synthetic resin. moreover, the liquid crystal display section 9 grade for displaying the keyboard section 7, the various switch panels 8 for actuation, and the alphabetic character and operator guidance for inputting an alphabetic character etc. that were inputted is arranged, and although there are not the vertical case 3, the mechanical device section later mentioned among two, and a drawing example, the microcomputer for control etc. is built in the upper surface of the top case 3.

[0009] Drawing 2 is a plan in the condition of having opened the covering object 6 90 abbreviation to the top case 3. Drawing 3 shows the plan except the lid of a cassette 4, the tape 10 and ink ribbon 11 for printing are carried in the cassette 4, and the tape 10 for printing of the receptor type wound around the tape spool 12 is constituted so that it may be conveyed through the printing section 15 which was guided by tape conveyance means to mention later at four koro 13, and was equipped with the thermal head 51 from the emission section 14. The ink ribbon 11 wound around the ribbon spool 16 is installed a tape 10 and in the shape of abbreviation parallel in the part of the printing section 15, and it is constituted so that it may be rolled round by the ribbon take-up spool 17.

[0010] In addition, it has six detecting elements 18-ed in which the location was beforehand carried out to the cassette 4 by the color of the ink of an ink ribbon 11 carried in this, the class (there is a lamination type which carries out mirror image printing with the receptor type which carries out normal image printing) of tape 10 for printing, the width-of-face size of a tape 10, etc., and it is constituted so that it can detect by the detecting element 19 prepared in said stowage 5. Moreover, the cassette 4 is equipped with the tape-feed roller 20 as one component of a tape conveyance means.

[0011] Next, the configuration of the interlock sections, such as a tape conveyance means formed in the printing tape listing device 1, the printing section 15, and a rolling-up means of an ink ribbon, is explained, referring to drawing 2 , drawing 4 - drawing 8 . On the receptor type tape 10, it is printed on the surface which meets an ink ribbon 11, an adhesives layer is beforehand applied to the rear-face side of a tape 10, and temporary adhesion of the mold release tape is carried out at this adhesives layer.

[0012] First, the configuration of the conveyance means of the tape 10 for printing and the rolling-up means of an ink ribbon 11 is explained. The ribbon drive cam 22 which fits into the bore section of the ribbon take-up spool 17, and the tape drive cam 23 which fits into the bore section of the tape-feed roller 20 are set up respectively at the frame 21 arranged at the inferior-surface-of-tongue side of the stowage 5 in the printing tape listing device 1, and the turning effort of the tape drive motor 24 is transmitted to the ribbon drive cam 22 and the tape drive cam 23 through the gear train 25 arranged on the inferior surface of tongue of a frame 21.

[0013] And the frame 21 in the stowage 5 of said cassette is made to equip with the printing section means for supporting 54 which consist of a substrate 29 which set up the holder shaft 30 for carrying out rotatable support of the platen holder 28 with which it had the platen 26 which attaches and detaches the head supporter material 52 equipped with the thermal head 51 for printing on a tape 10 through an ink ribbon 11 to the heater element 53 in this thermal head 51 with one secure-closing screw thread 56 in this invention.

[0014] Next, the details of this configuration are explained, referring to drawing 5 - drawing 7 . The thermal head 51 in the printing section 15 is stretched by the surface of perpendicular Itabe 52a in the head supporter material 52 of the metal shape of a cross section of about L characters, such as a product made from aluminum die casting which makes a heat sink serve a double purpose, through adhesives. As shown in drawing 6 , the heater element 53 in a thermal head 51 is arranged in the shape of 1 train to the perpendicular direction of a right angle to the upper surface of a frame 21, in the example, suitably, with the pitch, is attached to the effective width of 15mm, and is arranged 128 dots.

[0015] In the 1 side approach part of said substrate 29, the end face of the holder shaft 30 is fixed and set up in a caulking etc. The base of the platen holder 28 equipped with the platen 26 made to meet so that it may press to the heater element 53 of said thermal head 51, and the press roller 27 made to meet the tape-feed roller 20 is made to insert in this holder shaft 30 rotatable.

[0016] In equipping a substrate 29 with said head supporter material 52, the engagement pins 58a and 58b of the pair which carries out a downward protrusion from the inferior surface of tongue of bottom plate 52b in this head supporter

material 52 A substrate 29 is made to fit into the engagement long holes 57a and 57b of the pair by which drilling formation was carried out, and a temporary stop is carried out to the screw-thread hole 61 of a substrate 29 by the mounting screw 60 through the long hole 59 drilled in bottom plate 52b. Subsequently So that the tape 10 and ink ribbon 11 for printing may be pressed at the center (center of the heater element width of face of said direction of a train, and the direction which intersects perpendicularly) crosswise [ of the heater element 53 of the shape of a single tier in said thermal head 51 ] That the pressure welding of the circumference side of the roller-like platen 26 should be carried out, so that the bus-bar of the circumference side of the platen 26 of the shape of a roller in said platen holder 28 may contact centering on the cross direction of the heater element 53 of the shape of a single tier of a thermal head 51 Centering control, such as carrying out location \*\*\*\*\*, is performed in the direction of X, and a mounting screw 60 is put firmly on it the back.

[0017] In addition, by inserting the platen holder 28 in the holder shaft 30 rotatable, twisting to the stop piece 63 and the platen holder 28 in a substrate 29, and stopping the edge of a coil spring 62, respectively, after twisting to the base side of said holder shaft 30 and inserting in the coil section of a coil spring 62, it is energized so that the back of the platen holder 28 may contact guide plate 21a crooked upward from the 1 side of said frame 21.

[0018] In addition, it escapes to the upper limit of the holder shaft 30, a stop ring is inserted in, and omission of the platen holder 28 are prevented. Thus, centering control of the head supporter material 52 which the holder shaft 30 of a substrate 29 was equipped with the end face of a platen 26 and the platen holder 28 with press roller 27, and was equipped with the thermal head 51 is carried out beforehand, it is attached, and, subsequently secure-closing immobilization of this substrate 29 is carried out with the secure-closing screw thread 56 through the female screw section 64 on the upper surface of a frame 21.

[0019] In this case, two or more projections for positioning (not shown) which the loosely-fitting holes 65 and 66 with which the base of said mounting screw 60 and the holder shaft 30 may fit in loosely are drilled by the frame 21, and project from the upper surface of a frame 21 fit into the tooling holes 67 and 68 drilled by the substrate 29. And the back of this platen holder 28 is pressed, and the press holder 31 for pressing the tape 10 to pass on the surface of the heater element 53 of a thermal head 51 by the platen 26 is equipped with the koro 34 which \*\*\*\*s to said guide plate 21a as shown in drawing 4 . The other end of this press holder 31 is connected with the end of the interlocking link 33 prepared rotatable centering on the pivotable support shaft 32 set up on said frame 21. The pin 36 which fits into the guide rail 35 of the other end of this interlocking link 33 is attached in the shift lever 37 for platens arranged in the cross direction of the top case 3 by the rear face (inferior surface of tongue) of a frame 21 movable. When closing the covering object 6 so that the engagement pin 38 may be formed in standup tip piece 37a of this shift lever 37 for platens, it may engage with the interior 39 of the press proposal which protruded on the inside of said covering object 6 and the stowage 5 of said cassette 4 may be covered, A platen 26 is pressed by the surface of a heater element 53 through the platen holder 28, and the press roller 27 is mostly pressed by coincidence on the surface of the tape-feed roller 20, and it is printed, sending out a tape 10 from the cassette 4 laid in said stowage 5.

[0020] On the contrary, when the covering object 6 opens centering on 40 hinge pins, engagement at the interior 39 of a press proposal and the engagement pin 38 is canceled, and the platen 26 attached in it estranges the platen holder 28 from the heater element 53 of a thermal head 51, and it consists of energization force of said torsion coil spring 62 so that the press roller 27 may rotate in the direction estranged from the surface of the tape-feed roller 20.

[0021] In addition, if the location of the secure-closing screw thread 56 for carrying out secure-closing immobilization is set as 21 29 substrates in the location close to the holder shaft 30, the gap of arrangement to the frame 21 of the holder shaft 30 will decrease, and the effect are hard coming to generate a gap in the arrangement relation of the platen holder 28 back to the press holder 31 will be done so. moreover, a substrate 29 shows with the two-dot chain line of drawing 8 -- as -- the crown -- if it is made the thing made to deform beforehand in the shape of a upward convex curve so that a \*\*, i.e., the halfway section of the longitudinal direction of a substrate 29, may come floating to the upper surface of a frame 21, when equipping the frame 21 plate-like upper surface with a substrate 29 with the secure-closing screw thread 56, said substrate 29 which carried out the convex curve is pressed down a frame 21 and in the shape of parallel with the secure-closing screw thread 56. Consequently, the holder shaft 30 set up to the substrate 29 does so the effect that it can set up so that it may extend at the frame 21 upper surface and a right angle.

[0022] Furthermore, the rear face of the anchoring piece 71 is pasted through the hole 70 drilled in perpendicular Itabe 52a of the head supporter material 52, and the halfway section of the flexible patchboard 69 for the voltage impression to a thermal head 51 is led to bottom case 2 inboard through the insertion hole (not shown) drilled in the insertion hole 72 and frame 21 which were drilled in the substrate 29. Next, the cutting equipment 42 for cutting the tape 10 sent out from said cassette 4 is explained, referring to drawing 4 . Cutting equipment 42 consists of the stationary knife 43, a movable edge 44, a control lever 45 of the shape of side view of L characters for rotating this movable edge 44

manually, and rotation pivot 46 grade.

[0023] In addition, longitudinal 1 side edge of a control lever 45 is equipped with the push button 48 made of synthetic resin, and it is energized so that the cutting blade surface of the rotation edge 44 may be greatly extended to the cutting blade surface of a stationary knife 43 according to the spring force of the energization spring (not shown) constructed across between the other end of the control lever 45 concerned, and a frame 21. moreover, the relief switch which is not in the sensor arm section of a control lever 45 and the agonist 50 made of synthetic resin which rotates in one a drawing example when moving in the direction which the movable edge 44 closes -- contacting -- printing -- if working, it is constituted so that the send of the tape 10 in a cassette 4 may be forbidden and rotation of the tape drive motor 24 may be stopped.

[0024]

[Function and Effect of the Invention] As explained above, the printing section means for supporting in the printing tape listing device of this invention On the frame of the stowage of the cassette which stored the tape for printing at least, the conveyance means of the tape for printing, It is the printing tape listing device which comes to have a thermal head for printing on this tape, and the platen which attaches and detaches to the heater element of this thermal head. To the substrate which set up the holder shaft for carrying out rotatable support of the platen holder with which it had said platen Carry out centering control of the head supporter material equipped with said thermal head beforehand, and it is attached. Since it constitutes so that said substrate may be \*\*\*\*ed on a frame and secure-closing immobilization may be carried out, the physical relationship of the location of the train of the heater element of the thermal head on the head supporter material attached in the substrate and the press section of a platen can set up without error by fine adjustment beforehand.

[0025] Therefore, it is constituted in this way and the quality of printed character to a tape can be stabilized only in the easy activity referred to as \*\*\*\*ed and putting a substrate [ finishing / centering control ] firmly on a frame. Especially, at the time of exchange of the printing sections, such as failure of a thermal head, since the physical relationship of the train of the heater element of said thermal head and a platen does not shift even if it exchanges that to which head supporter material, and a holder shaft and a substrate with a thermal head were set, while exchange of components can perform very easily, the effect that it can prevent deteriorating the quality of printed character of a tape is done so.

---

[Translation done.]

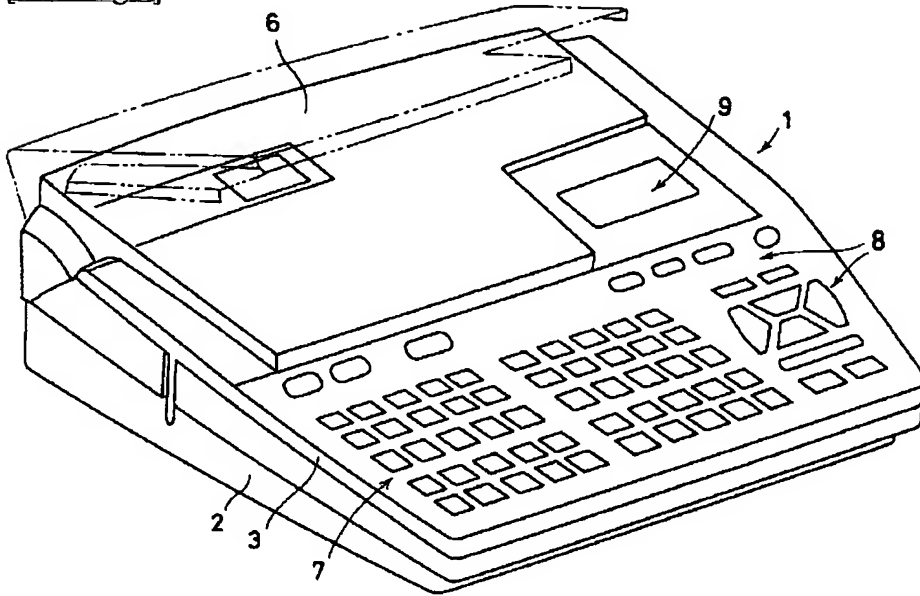
## \* NOTICES \*

Japan Patent Office is not responsible for any damages caused by the use of this translation.

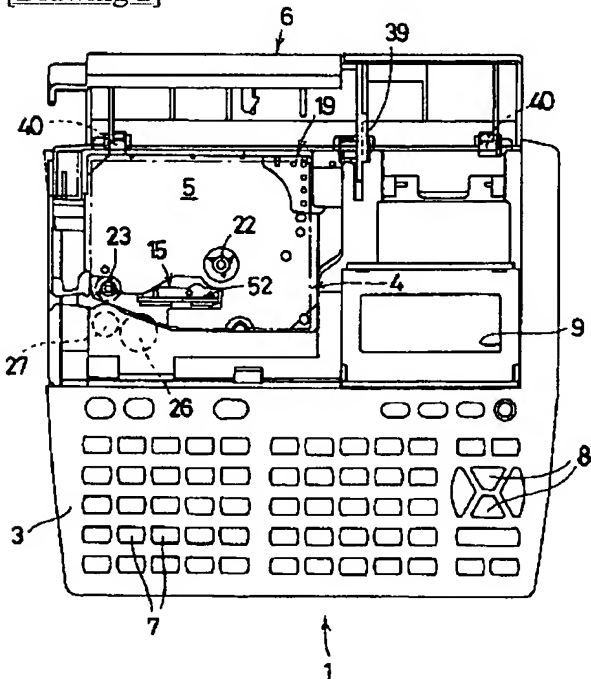
1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

## DRAWINGS

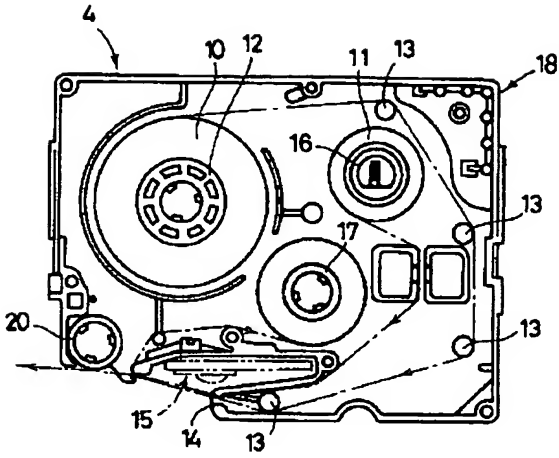
[Drawing 1]



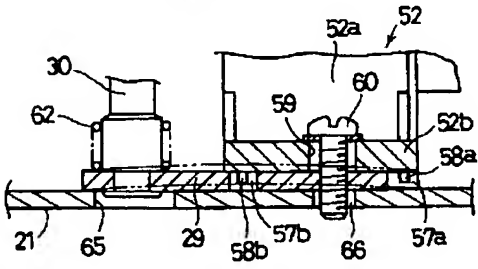
[Drawing 2]



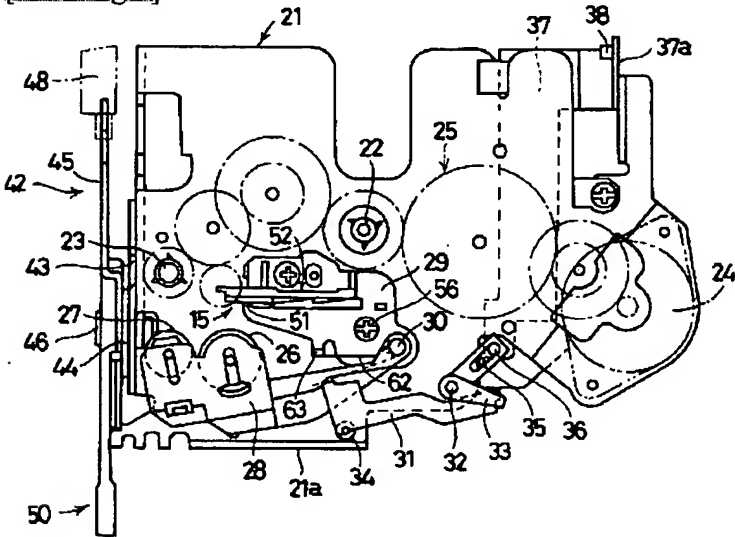
[Drawing 3]



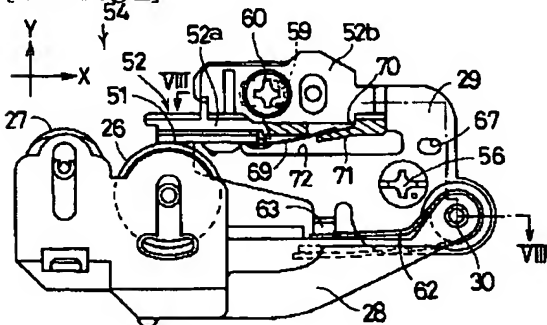
[Drawing 8]



[Drawing 4]

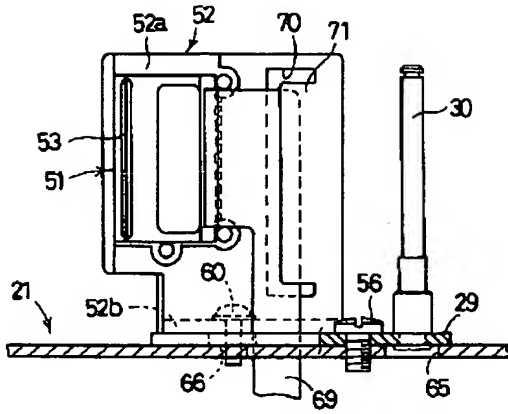


[Drawing 5]

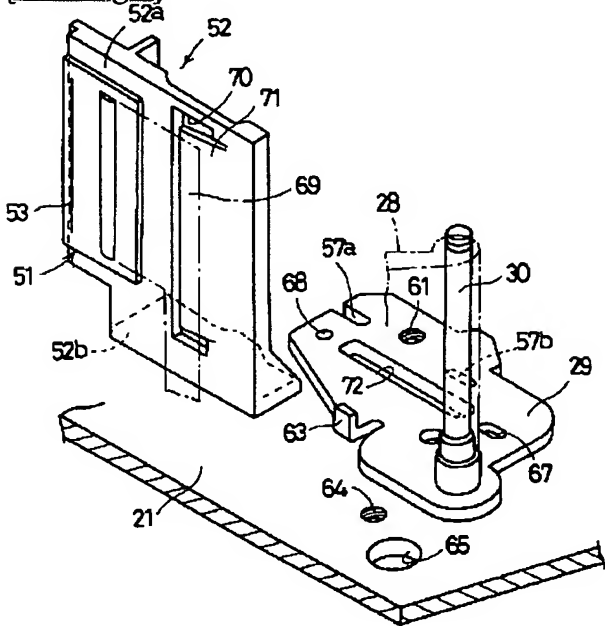


[Drawing 6]





[Drawing 7]



[Translation done.]

**\* NOTICES \***

**Japan Patent Office is not responsible for any damages caused by the use of this translation.**

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

---

**CORRECTION OR AMENDMENT**


---

[Official Gazette Type] Printing of amendment by the convention of 2 of Article 17 of patent law  
 [Section partition] The 4th partition of the 2nd section  
 [Date of issue] December 25, Heisei 13 (2001. 12.25)

[Publication No.] JP,8-25753,A  
 [Date of Publication] January 30, Heisei 8 (1996. 1.30)  
 [Year copy format] Open patent official report 8-258  
 [Filing Number] Japanese Patent Application No. 6-165264  
 [The 7th edition of International Patent Classification]

B41J 25/312  
 25/316  
 2/32  
 11/14  
 32/00

[FI]

B41J 25/28 H  
 11/14  
 32/00 Z  
 3/20 109 C

[Procedure revision]  
 [Filing Date] July 18, Heisei 13 (2001. 7.18)  
 [Procedure amendment 1]  
 [Document to be Amended] Specification  
 [Item(s) to be Amended] Whole sentence  
 [Method of Amendment] Modification  
 [Proposed Amendment]  
 [Document Name] Specification  
 [Title of the Invention] Printing section means for supporting in a printing tape listing device  
 [Claim(s)]

[Claim 1] A conveyance means of a tape for printing to a frame of a stowage of a cassette which stored a tape for printing at least A thermal head for printing on this tape A platen which attaches and detaches to a heater element of this thermal head Centering control of the head supporter material by which a substrate which set up a holder shaft for carrying out rotatable support of the platen holder with which it is the printing section means for supporting in a printing tape listing device equipped with the above, and had said platen was equipped with said thermal head is carried out beforehand, it is attached, and it is characterized by constituting said substrate so that secure-closing immobilization may be carried out with an secure-closing screw thread at a frame.

[Claim 2] Printing section means for supporting in a printing tape listing device according to claim 1 characterized by being set as a location where a location of said secure-closing screw thread approached a location of said holder shaft.

[Claim 3] said substrate -- the crown -- printing section means for supporting in claim 1 characterized by being pressed down said frame and letter of parallel with said secure-closing screw thread when it deforms beforehand in the shape of

[http://www4.ipdl.jpo.go.jp/cgi-bin/tran\\_web CGI-ejje?u=http%3A%2F%2Fwww4.ipdl.jpo.go.jp%2FTokujit...](http://www4.ipdl.jpo.go.jp/cgi-bin/tran_web CGI-ejje?u=http%3A%2F%2Fwww4.ipdl.jpo.go.jp%2FTokujit...) 1/5/2004

a upward convex curve so that a \*\*, i.e., the halfway section of a longitudinal direction of a substrate, may come floating to the upper surface of said frame, and the upper surface of said frame is equipped with said secure-closing screw thread, or a printing tape listing device given in two.

[Detailed Description of the Invention]

[0001]

[Industrial Application] The tape printer equipped with the printing section and the platen which were equipped with the thermal head for the cassette which stored the tape for printing at least, and the tape conveyance means is equipped with this invention free [ attachment and detachment ], and it relates to the structure of the printing section means for supporting in the printing tape listing device for printing images, such as an alphabetic character and a graphic form, according to the data beforehand inputted into said tape.

[0002]

[Description of the Prior Art] These people proposed the printing tape listing device in JP,5-92650,A for labeling etc. previously. This equipment the cassette which stored the tape and ink ribbon for printing which is printed media It constitutes so that the cassette stowage in a printing tape listing device can be equipped free [ attachment and detachment ]. In this cassette stowage The printing section equipped with the thermal head, and the platen of the shape of a roller which attaches and detaches in this printing section, It has the rolling-up means of said ink ribbon etc., and images, such as a character string, are printed on the tape concerned while pulling out a tape at speed suitably from a cassette based on the data beforehand inputted into the printing tape listing device. It had tape cutting equipment for cutting a tape [ finishing / printing ] to predetermined length.

[0003] And said printing section \*\*\*\*s and carries out the stop of the bottom plate section in side view [ of L characters ]-like head supporter material to the upper surface of the plate-like frame in said cassette stowage, stretches a thermal head with adhesives in the front face of perpendicular Itabe of this head supporter material, and it is constituted so that it may be arranged in the shape of [ to which the upper surface of said frame and the heater element of the shape of 1 train of a thermal head cross at right angles ] a perpendicular.

[0004] On the other hand, the pivot set up from the frame in a cassette stowage was equipped with the end face of the platen holder which supports said platen rotatable, and it was constituted so that it might press toward the one train band-like heater element of the thermal head in said printing section through a roller release tongue and a roller release rod.

[0005]

[Problem(s) to be Solved by the Invention] However, there were following un-arranging with the configuration of above conventional equipment. That is, that the pressure welding of the circumference side of a roller-like platen should be carried out, the fitting location of head supporter material needed to be fine-adjusted to the frame, it needed to put firmly on on the screw, and there was a problem of taking time in this accommodation so that the tape and ink ribbon for printing might be pressed by the center (center of the heater element width of face of said direction of a train, and the direction which intersects perpendicularly) crosswise [ of the heater element of the shape of a single tier in said thermal head When it carried out [ damage / especially / a thermal head ] and having been exchanged said whole head supporter material, this centering-control activity had to be done on the spot, and it was delayed very much.

[0006] The invention in this application is made that the aforementioned problem should be solved, and aims to let centering control offer the printing section means for supporting in a printing tape listing device it enabled it to perform simply.

[0007]

[Means for Solving the Problem] In order to attain said purpose, printing section means for supporting in a printing tape listing device of invention according to claim 1 On a frame of a stowage of a cassette which stored a tape for printing at least, a conveyance means of a tape for printing, In a printing tape listing device which comes to have a thermal head for printing on this tape, and a platen which attaches and detaches to a heater element of this thermal head Centering control of the head supporter material by which a substrate which set up a holder shaft for carrying out rotatable support of the platen holder with which it had said platen was equipped with said thermal head is carried out beforehand, and it is attached, and it constitutes so that secure-closing immobilization of said substrate may be carried out with an secure-closing screw thread at a frame. Moreover, in printing section means for supporting in a printing tape listing device of invention according to claim 2, it is set as a location where a location of an secure-closing screw thread approached a location of a holder shaft. furthermore, printing section means for supporting in a printing tape listing device of invention according to claim 3 -- setting -- a substrate -- the crown -- it deforms beforehand in the shape of a upward convex curve so that a \*\*, i.e., the halfway section of a longitudinal direction of a substrate 29, may come floating to the upper surface of a frame, and when the upper surface of a frame is equipped with an secure-closing screw thread, it is

pressed down a frame and in the shape of parallel with an secure-closing screw thread.

[0008]

[Example] Next, the example which materialized this invention is explained. Drawing 1 shows the outline perspective diagram of the printing tape listing device 1, and the stowage 5 for containing the cassette 4 mentioned later, enabling free attachment and detachment is established in it free [ closing motion of the wrap covering object 6 ] at the upper surface 1 side of the case 3 when fitting into the bottom case 2 in the printing tape listing device 1. Both the vertical cases 3 and 2 and the covering object 6 are the injection-molded products made of synthetic resin. moreover, the liquid crystal display section 9 grade for displaying the keyboard section 7, the various switch panels 8 for actuation, and the alphabetic character and operator guidance for inputting an alphabetic character etc. that were inputted is arranged, and although there are not the vertical case 3, the mechanical device section later mentioned among two, and a drawing example, the microcomputer for control etc. is built in the upper surface of the top case 3.

[0009] Drawing 2 is a plan in the condition of having opened the covering object 6 90 abbreviation to the top case 3.

Drawing 3 shows the plan except the lid of a cassette 4, the tape 10 and ink ribbon 11 for printing are carried in the cassette 4, and the tape 10 for printing of the receptor type wound around the tape spool 12 is constituted so that it may be conveyed through the printing section 15 which was guided by tape conveyance means to mention later at four koro 13, and was equipped with the thermal head 51 from the emission section 14. The ink ribbon 11 wound around the ribbon spool 16 is installed a tape 10 and in the shape of abbreviation parallel in the part of the printing section 15, and it is constituted so that it may be rolled round by the ribbon take-up spool 17.

[0010] In addition, it has six detecting elements 18-ed in which the location was beforehand carried out to the cassette 4 by the color of the ink of an ink ribbon 11 carried in this, the class (there is a lamination type which carries out mirror image printing with the receptor type which carries out normal image printing) of tape 10 for printing, the width-of-face size of a tape 10, etc., and it is constituted so that it can detect by the detecting element 19 prepared in said stowage 5. Moreover, the cassette 4 is equipped with the tape-feed roller 20 as one component of a tape conveyance means.

[0011] Next, the configuration of the interlock sections, such as a tape conveyance means formed in the printing tape listing device 1, the printing section 15, and a rolling-up means of an ink ribbon, is explained, referring to drawing 2, drawing 4 - drawing 8. On the receptor type tape 10, it is printed on the surface which meets an ink ribbon 11, an adhesives layer is beforehand applied to the rear-face side of a tape 10, and temporary adhesion of the mold release tape is carried out at this adhesives layer.

[0012] First, the configuration of the conveyance means of the tape 10 for printing and the rolling-up means of an ink ribbon 11 is explained. The ribbon drive cam 22 which fits into the bore section of the ribbon take-up spool 17, and the tape drive cam 23 which fits into the bore section of the tape-feed roller 20 are set up respectively at the frame 21 arranged at the inferior-surface-of-tongue side of the stowage 5 in the printing tape listing device 1, and the turning effort of the tape drive motor 24 is transmitted to the ribbon drive cam 22 and the tape drive cam 23 through the gear train 25 arranged on the inferior surface of tongue of a frame 21.

[0013] And the frame 21 in the stowage 5 of said cassette is made to equip with the printing section means for supporting 54 which consist of a substrate 29 which set up the holder shaft 30 for carrying out rotatable support of the platen holder 28 with which it had the platen 26 which attaches and detaches the head supporter material 52 equipped with the thermal head 51 for printing on a tape 10 through an ink ribbon 11 to the heater element 53 in this thermal head 51 with one secure-closing screw thread 56 in this invention.

[0014] Next, the details of this configuration are explained, referring to drawing 5 - drawing 7. The thermal head 51 in the printing section 15 is stretched by the surface of perpendicular Itabe 52a in the head supporter material 52 of the metal shape of a cross section of about L characters, such as a product made from aluminum die casting which makes a heat sink serve a double purpose, through adhesives. As shown in drawing 6, the heater element 53 in a thermal head 51 is arranged in the shape of 1 train to the perpendicular direction of a right angle to the upper surface of a frame 21, in the example, suitably, with the pitch, is attached to the effective width of 15mm, and is arranged 128 dots.

[0015] In the 1 side approach part of said substrate 29, the end face of the holder shaft 30 is fixed and set up in a caulking etc. The base of the platen holder 28 equipped with the platen 26 made to meet so that it may press to the heater element 53 of said thermal head 51, and the press roller 27 made to meet the tape-feed roller 20 is made to insert in this holder shaft 30 rotatable.

[0016] In equipping a substrate 29 with said head supporter material 52, mind the long hole 59 which the substrate 29 was made to fit into the engagement long holes 57a and 57b of the pair by which drilling formation was carried out, and drilled the engagement pins 58a and 58b of the pair which carries out a downward protrusion from the inferior surface of tongue of bottom plate 52b in this head supporter material 52 in bottom plate 52b. By the mounting screw 60, to the screw-thread hole 61 of a substrate 29 a tacking meal and crosswise [ of the heater element 53 of the shape of a single

tier / in / subsequently / said thermal head 51 ] at the center (center of the heater element width of face of said direction of a train, and the direction which intersects perpendicularly) That the pressure welding of the circumference side of the roller-like platen 26 should be carried out so that the tape 10 and ink ribbon 11 for printing may be pressed Centering control, such as carrying out location \*\*\*\*\*, is performed in the direction of X, and a mounting screw 60 is put firmly on it the back so that the bus-bar of the circumference side of the platen 26 of the shape of a roller in said platen holder 28 may contact centering on the cross direction of the heater element 53 of the shape of a single tier of a thermal head 51.

[0017] In addition, by inserting the platen holder 28 in the holder shaft 30 rotatable, twisting to the stop piece 63 and the platen holder 28 in a substrate 29, and stopping the edge of a coil spring 62, respectively, after twisting to the base side of said holder shaft 30 and inserting in the coil section of a coil spring 62, it is energized so that the back of the platen holder 28 may contact guide plate 21a crooked upward from the 1 side of said frame 21.

[0018] In addition, it escapes to the upper limit of the holder shaft 30, a stop ring is inserted in, and omission of the platen holder 28 are prevented. Thus, centering control of the head supporter material 52 which the holder shaft 30 of a substrate 29 was equipped with the end face of a platen 26 and the platen holder 28 with press roller 27, and was equipped with the thermal head 51 is carried out beforehand, it is attached, and, subsequently secure-closing immobilization of this substrate 29 is carried out with the secure-closing screw thread 56 through the female screw section 64 on the upper surface of a frame 21.

[0019] In this case, two or more projections for positioning (not shown) which the loosely-fitting holes 65 and 66 with which the base of said mounting screw 60 and the holder shaft 30 may fit in loosely are drilled by the frame 21, and project from the upper surface of a frame 21 fit into the tooling holes 67 and 68 drilled by the substrate 29. And the back of this platen holder 28 is pressed, and the press holder 31 for pressing the tape 10 to pass on the surface of the heater element 53 of a thermal head 51 by the platen 26 is equipped with the koro 34 which \*\*\*\*s to said guide plate 21a as shown in drawing 4. The other end of this press holder 31 is connected with the end of the interlocking link 33 prepared rotatable centering on the pivotable support shaft 32 set up on said frame 21. The pin 36 which fits into the guide rail 35 of the other end of this interlocking link 33 is attached in the shift lever 37 for platens arranged in the cross direction of the top case 3 by the rear face (inferior surface of tongue) of a frame 21 movable. The engagement pin 38 should be formed in standup tip piece 37a of this shift lever 37 for platens, engage with the interior 39 of the press proposal which protruded on the inside of said covering object 6, and cover the stowage 5 of said cassette 4. When closing the covering object 6, a platen 26 is pressed by the surface of a heater element 53 through the platen holder 28, and the press roller 27 is mostly pressed by coincidence on the surface of the tape-feed roller 20, and it is printed, sending out a tape 10 from the cassette 4 laid in said stowage 5.

[0020] On the contrary, when the covering object 6 opens centering on 40 hinge pins, engagement at the interior 39 of a press proposal and the engagement pin 38 is canceled, and the platen 26 attached in it estranges the platen holder 28 from the heater element 53 of a thermal head 51, and it consists of energization force of said torsion coil spring 62 so that the press roller 27 may rotate in the direction estranged from the surface of the tape-feed roller 20.

[0021] In addition, if the location of the secure-closing screw thread 56 for carrying out secure-closing immobilization is set as 21 29 substrates in the location close to the holder shaft 30, the gap of arrangement to the frame 21 of the holder shaft 30 will decrease, and the effect are hard coming to generate a gap in the arrangement relation of the platen holder 28 back to the press holder 31 will be done so. moreover, a substrate 29 shows with the two-dot chain line of drawing 8 -- as -- the crown -- if it is made the thing made to deform beforehand in the shape of a upward convex curve so that a \*\*, i.e., the halfway section of the longitudinal direction of a substrate 29, may come floating to the upper surface of a frame 21, when equipping the frame 21 plate-like upper surface with a substrate 29 with the secure-closing screw thread 56, said substrate 29 which carried out the convex curve is pressed down a frame 21 and in the shape of parallel with the secure-closing screw thread 56. Consequently, the holder shaft 30 set up to the substrate 29 does so the effect that it can set up so that it may extend at the frame 21 upper surface and a right angle.

[0022] Furthermore, the rear face of the anchoring piece 71 is pasted through the hole 70 drilled in perpendicular Itabe 52a of the head supporter material 52, and the halfway section of the flexible patchboard 69 for the voltage impression to a thermal head 51 is led to bottom case 2 inboard through the insertion hole (not shown) drilled in the insertion hole 72 and frame 21 which were drilled in the substrate 29. Next, the cutting equipment 42 for cutting the tape 10 sent out from said cassette 4 is explained, referring to drawing 4. Cutting equipment 42 consists of the stationary knife 43, a movable edge 44, a control lever 45 of the shape of side view of L characters for rotating this movable edge 44 manually, and rotation pivot 46 grade.

[0023] In addition, longitudinal 1 side edge of a control lever 45 is equipped with the push button 48 made of synthetic resin, and it is energized so that the cutting blade surface of the rotation edge 44 may be greatly extended to the cutting

blade surface of a stationary knife 43 according to the spring force of the energization spring (not shown) constructed across between the other end of the control lever 45 concerned, and a frame 21. moreover, the relief switch which is not in the sensor arm section of a control lever 45 and the agonist 50 made of synthetic resin which rotates in one a drawing example when moving in the direction which the movable edge 44 closes -- contacting -- printing -- if working, it is constituted so that the send of the tape 10 in a cassette 4 may be forbidden and rotation of the tape drive motor 24 may be stopped.

[0024]

[Effect of the Invention] Printing section means for supporting [ in / as explained above / the printing tape listing device of this invention according to claim 1 ], On the frame of the stowage of the cassette which stored the tape for printing at least, the conveyance means of the tape for printing, It is the printing tape listing device which comes to have a thermal head for printing on this tape, and the platen which attaches and detaches to the heater element of this thermal head. To the substrate which set up the holder shaft for carrying out rotatable support of the platen holder with which it had said platen The location of the train of the heater element of the thermal head on the head supporter material which carried out centering control of the head supporter material equipped with said thermal head beforehand, attached it, and was attached in the substrate since it constituted so that secure-closing immobilization might be carried out with an secure-closing screw thread, Physical relationship with the press section of a platen can set up without error by fine adjustment beforehand.

[0025] Therefore, it is constituted in this way and the quality of printed character to a tape can be stabilized only in the easy activity which tells a frame that a substrate [ finishing / centering control ] carries out secure-closing immobilization with an secure-closing screw thread. Especially, at the time of exchange of the printing sections, such as failure of a thermal head, since the physical relationship of the train of the heater element of said thermal head and a platen does not shift even if it exchanges that to which head supporter material, and a holder shaft and a substrate with a thermal head were set, while exchange of components can perform very easily, the effect that it can prevent deteriorating the quality of printed character of a tape is done so. Moreover, it is set as the location where the location of an secure-closing screw thread approached the location of a holder shaft, the gap of arrangement to the frame of a holder shaft decreases, and the effect are hard coming to be generated a gap in the arrangement relation on the back of a platen holder to a press holder does so in the printing section means for supporting in the printing tape listing device of invention according to claim 2. furthermore, the printing section means for supporting in the printing tape listing device of invention according to claim 3 -- setting -- a substrate -- the crown -- it deforms beforehand in the shape of a upward convex curve so that a \*\*, i.e., the halfway section of the longitudinal direction of a substrate, may come floating to the upper surface of a frame, and when the upper surface of a frame is equipped with an secure-closing screw thread, it is pressed down a frame and in the shape of parallel with an secure-closing screw thread. Consequently, the holder shaft set up to the substrate does so the effect that it can set up so that it may extend at the frame upper surface and a right angle.

[Brief Description of the Drawings]

[Drawing 1] It is the perspective diagram of the printing tape listing device of this invention.

[Drawing 2] It is the plan of the printing tape listing device in the condition of having opened the covering object.

[Drawing 3] It is the plan of the cassette which omitted the lid.

[Drawing 4] It is the plan of the mechanical device section in equipment.

[Drawing 5] a part of printing section -- it is a notch plan.

[Drawing 6] a part of printing section of the condition except a platen holder -- it is notch front view.

[Drawing 7] It is the perspective diagram of head supporter material and a substrate.

[Drawing 8] Drawing 5 It is a VIII-VIII line view cross section.

[Description of Notations]

1 Printing Tape Listing Device

2 Bottom Case

3 Top Case

4 Cassette

5 Stowage

6 Covering Object

10 Tape

11 Ink Ribbon

15 Printing Section

20 Tape-Feed Roller

21 Frame  
26 Platen  
27 Press Roller  
28 Platen Holder  
29 Substrate  
30 Holder Shaft  
51 Thermal Head  
52 Head Supporter Material  
53 Heater Element  
54 Printing Section Means for Supporting  
56 Secure-Closing Screw Thread

---

[Translation done.]

(19) 日本国特許庁 (J P)

(12) 公 開 特 許 公 報 (A)

(11) 特許出願公開番号

特開平8-25753

(43) 公開日 平成 8 年 (1996) 1 月 30 日

(51) Int. Cl.<sup>8</sup>

B 4 1 J 25/312  
25/316  
2/32

識別記号

庁内整理番号

F I

技術表示箇所

B 4 1 J 25/ 28

H

3/ 20

1 0 9 C

審査請求 未請求 請求項の数 1 O L (全 6 頁) 最終頁に続く

(21) 出願番号 特願平6-165264

(22) 出願日 平成 6 年 (1994) 7 月 18 日

(71) 出願人 000005267

ブラザー工業株式会社

愛知県名古屋市瑞穂区苗代町15番1号

(72) 発明者 竹中 優一

名古屋市瑞穂区苗代町15番1号 ブラザー  
工業株式会社内

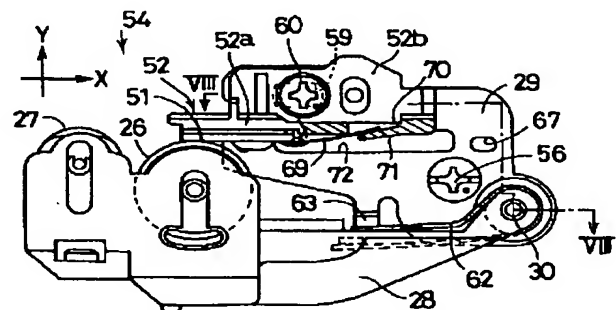
(74) 代理人 弁理士 石井 暁夫 (外 2 名)

(54) 【発明の名称】 印字テープ作成装置における印字部支持装置

(57) 【要約】

【目的】 テープ 1 0 に印字するためのサーマルヘッド 5 1 の発熱素子と押圧するプラテン 2 6 の位置との調節を容易にする。

【構成】 テープに印字するためのサーマルヘッド 5 1 の発熱素子に対して接離するプラテン 2 6 が備えられたプラテンホルダ 2 8 を回動可能支持するためのホルダ軸 3 0 を立設した基板 2 9 に、サーマルヘッド 5 1 が備えられたヘッド支持部材 5 2 を予め位置調節して取付けし、この基板 2 9 を、少なくとも印字用のテープを格納したカセットの収納部のフレームに、締着ねじ 5 6 にて締着固定するように構成する。





【特許請求の範囲】

【請求項 1】 少なくとも印字用のテープを格納したカセットの収納部のフレームに、印字用のテープの搬送手段と、該テープに印字するためのサーマルヘッドと、該サーマルヘッドの発熱素子に対して接離するプラテンとを備えてなる印字テープ作成装置において、前記プラテンが備えられたプラテンホルダを回動可能支持するためのホルダ軸を立設した基板に、前記サーマルヘッドが備えられたヘッド支持部材を予め位置調節して取付けし、前記基板をフレームにねじ締着固定するように構成したとを特徴とする印字テープ作成装置における印字部支持装置。

【発明の詳細な説明】

【0001】

【産業上の利用分野】 本発明は、少なくとも印字用のテープを格納したカセットを、サーマルヘッドを備えた印字部及びプラテンと、テープ搬送手段とを備えたテープ印字装置に着脱自在に装着し、前記テープに、予め入力されたデータに応じて文字や図形等の画像を印字するための印字テープ作成装置における印字部支持装置の構造に関するものである。

【0002】

【従来の技術】 本出願人は、先に特開平 5 - 9 2 6 5 0 号公報において、ラベル表示等のために、印字テープ作成装置を提案した。この装置は、被印字媒体である印字用のテープとインクリボンとを格納したカセットを、印字テープ作成装置におけるカセット収納部に着脱自在に装着できるように構成し、該カセット収納部には、サーマルヘッドを備えた印字部と、該印字部に対して接離するローラ状のプラテンと、前記インクリボンの巻取り手段等を備え、印字テープ作成装置に予め入力したデータに基づいてカセットからテープを適宜速度で引き出される途中において、当該テープに文字列等の画像を印字するものであり、印字済のテープを所定の長さに切断するためのテープ切断装置を備えていた。

【0003】そして、前記印字部は、前記カセット収納部における平板状のフレームの上面に、側面視 L 字状のヘッド支持部材における底板部をねじ止めし、該ヘッド支持部材の垂直板部の前面にサーマルヘッドを接着剤にて張設し、サーマルヘッドの 1 列状の発熱素子が前記フレームの上面と直交する垂直状に配置されるように構成されている。

【0004】他方、前記プラテンを支持するプラテンホルダの基端は、カセット収納部におけるフレームから立設する支軸に回動可能に装着され、ローラリリースつまみ及びローラリリースロッドを介して前記印字部におけるサーマルヘッドの 1 列帯状の発熱素子に向かって押圧するように構成されていた。

【0005】

【発明が解決しようとする課題】 しかしながら、上記の

従来装置の構成では、次のような不都合があった。即ち、前記サーマルヘッドにおける一列状の発熱素子の幅方向に中心（前記列方向と直交する方向の発熱素子幅の中心）に、印字用のテープ及びインクリボンが押圧されるように、ローラ状のプラテンの円周面を圧接すべく、フレームに対してヘッド支持部材の取付け位置を微調節してビスにて締着する必要がある、この調節作業に手間取るという問題があった。特に、サーマルヘッドが破損する等したときに、前記ヘッド支持部材ごと交換すると、この位置調節作業を現場で実行しなければならず、非常に手間取るのであった。

【0006】本願発明は、前記の問題を解決すべくなされたものであって、位置調節が簡単に実行できるようにした、印字テープ作成装置における印字部支持装置を提供することを目的とするものである。

【0007】

【課題を解決するための手段】 前記目的を達成するため、請求項 1 に記載の発明の印字テープ作成装置における印字部支持装置は、少なくとも印字用のテープを格納したカセットの収納部のフレームに、印字用のテープの搬送手段と、該テープに印字するためのサーマルヘッドと、該サーマルヘッドの発熱素子に対して接離するプラテンとを備えてなる印字テープ作成装置において、前記プラテンが備えられたプラテンホルダを回動可能支持するためのホルダ軸を立設した基板に、前記サーマルヘッドが備えられたヘッド支持部材を予め位置調節して取付けし、前記基板をフレームにねじ締着固定するように構成したものである。

【0008】

【実施例】 次に、本発明を具体化した実施例について説明する。図 1 は印字テープ作成装置 1 の概略斜視図を示し、印字テープ作成装置 1 における下ケース 2 に嵌合する上ケース 3 の上面一側には、後述するカセット 4 を着脱自在に収納するための収納部 5 を覆うカバー体 6 が開閉自在に設けられている。上下ケース 3、2 及びカバー体 6 は共に合成樹脂製の射出成形品である。また、上ケース 3 の上面には、文字等を入力するためのキーボード部 7、各種操作作用スイッチパネル 8、及び入力された文字や操作指示を表示するための液晶表示部 9 等が配置され、上下ケース 3、2 間には後述する機械的機構部及び図示しないが制御のためのマイクロコンピュータ等が内蔵されている。

【0009】 図 2 はカバー体 6 を上ケース 3 に対して略 90 度開いた状態の平面図である。図 3 はカセット 4 の蓋体を除いた平面図を示し、カセット 4 には印字用のテープ 10 とインクリボン 11 とが搭載されており、テープスプール 12 に巻回されたレセプタタイプの印字用のテープ 10 は、後述するテープ搬送手段により 4 つのコロ 13 に案内されて放出部 14 からサーマルヘッド 51 を備えた印字部 15 を経て搬送されるように構成されて

いる。リボンスプール16に巻回されたインクリボン11は、印字部15の箇所にてテープ10と略平行状に添設され、リボン巻取りスプール17にて巻き取られるように構成されている。

【0010】なお、カセット4には、これに搭載されるインクリボン11のインクの色、印字用のテープ10の種類（正像印字するレセプタタイプと鏡像印字するラミネートタイプとがある）やテープ10の幅寸法等により予め位置設定された6個の被検出部18を備え、前記収納部5に設けた検出部19にて検出できるように構成されている。また、カセット4にはテープ搬送手段の一部品としてテープ送りローラ20が備えられている。

【0011】次に、図2、図4～図8を参照しながら印字テープ作成装置1に設けたテープ搬送手段、印字部15及びインクリボンの巻き取り手段等の運動機構部の構成について説明する。レセプタタイプのテープ10では、インクリボン11と対面する表面に印字され、テープ10の裏面側には接着剤層が予め塗布され、この接着剤層に離型テープを仮接着している。

【0012】まず、印字用のテープ10の搬送手段及びインクリボン11の巻取り手段の構成について説明する。印字テープ作成装置1における収納部5の下面側に配置されたフレーム21には、リボン巻取りスプール17の内径部に嵌合するリボン駆動カム22と、テープ送りローラ20の内径部に嵌合するテープ駆動カム23とが各々立設され、テープ駆動モータ24の回転力は、フレーム21の下面に配列されたギヤ列25を介して、リボン駆動カム22及びテープ駆動カム23に伝達される。

【0013】そして、本発明では、インクリボン11を介してテープ10に印字するためのサーマルヘッド51が備えられたヘッド支持部材52と、該サーマルヘッド51における発熱素子53に接離するプラテン26が備えられたプラテンホルダ28を回転可能支持するためのホルダ軸30を立設した基板29とからなる印字部支持装置54を前記カセットの収納部5内のフレーム21に1本の締着ねじ56にて装着させるものである。

【0014】次に、この構成の詳細を、図5～図7を参照しつつ説明する。印字部15におけるサーマルヘッド51は、放熱板を兼用するアルミダイカスト製の金属製の断面ほぼL字状のヘッド支持部材52における垂直板部52aの表面に接着剤を介して張設されている。サーマルヘッド51における発熱素子53は、図6に示すように、フレーム21の上面に対して直角の垂直方向に1列状に配置され、実施例では適宜ピッチで有効幅15mmに付き128ドット配列されている。

【0015】前記基板29の一侧寄り部位には、ホルダ軸30の基端をかしめ等にて固定して立設する。このホルダ軸30には、前記サーマルヘッド51の発熱素子53に押圧するように対面させるプラテン26と、テープ

送りローラ20と対面させる押圧ローラ27とを装着したプラテンホルダ28の基部を回転可能に被嵌させる。

【0016】前記ヘッド支持部材52を基板29に装着するにあたり、該ヘッド支持部材52における底板52bの下面から下向き突設する一対の係合ピン58a、58bを、基板29に穿設形成された一対の係合長孔57a、57bに嵌合させ、底板52bに穿設した長孔59を介して取付けねじ60にて基板29のねじ孔61に仮止めし、次いで、前記サーマルヘッド51における一列状の発熱素子53の幅方向に中心（前記列方向と直交する方向の発熱素子幅の中心）に、印字用のテープ10及びインクリボン11が押圧されるように、ローラ状のプラテン26の円周面を圧接すべく、前記プラテンホルダ28におけるローラ状のプラテン26の円周面の母線がサーマルヘッド51の一列状の発熱素子53の幅方向中心に当接するように、X方向に位置ずらせる等の位置調節を実行して後、取付けねじ60を締着する。

【0017】なお、前記ホルダ軸30の基部側に挟じりコイルバネ62のコイル部を被嵌した後、ホルダ軸30にプラテンホルダ28を回転可能に被嵌し、基板29における係止片63とプラテンホルダ28とに挟じりコイルバネ62の端部をそれぞれ係止することにより、前記フレーム21の一侧から上向きに屈曲した案内板21aに、プラテンホルダ28の背面が当接するように付勢されている。

【0018】なお、ホルダ軸30の上端に抜け止めリングを被嵌して、プラテンホルダ28の脱落を防止する。このように、基板29のホルダ軸30にプラテン26及び押圧ローラ27付きのプラテンホルダ28の基端を装着し、且つサーマルヘッド51が備えられたヘッド支持部材52を予め位置調節して取付けし、次いで、この基板29をフレーム21の上面に雌ねじ部64を介して締着ねじ56にて締着固定する。

【0019】この場合、フレーム21には、前記取付けねじ60、ホルダ軸30の基部が遊嵌しうる遊嵌孔65、66が穿設されており、また、フレーム21の上面から突出する位置決め用の複数の突起（図示せず）が、基板29に穿設された位置決め孔67、68に嵌合するものである。そして、このプラテンホルダ28の背面を押圧して、通過するテープ10をプラテン26にてサーマルヘッド51の発熱素子53の表面に押圧するための押圧ホルダ31は、図4に示すように、前記案内板21aに摺接するコロ34を備える。この押圧ホルダ31の他端は、前記フレーム21に立設する枢支軸32を中心にして回転可能に設けられた連動リンク33の一端に連結されている。この連動リンク33の他端の案内溝35に嵌合するピン36は、フレーム21の裏面（下面）に上ケース3の前後方向に移動可能に配設されたプラテン用動作レバー37に取付けられている。このプラテン用動作レバー37の立ち上がり先端片37aには係合ピン

38が設けられ、前記カバー体6の内面に突設した押圧案内部39に係合し、前記カセット4の収納部5を覆うようにカバー体6を閉じるとき、プラテンホルダ28を介してプラテン26が発熱素子53の表面に押圧され、ほぼ同時に押圧ローラ27がテープ送りローラ20の表面に押圧され、前記収納部5内に載置されたカセット4からテープ10を送り出しながら印字される。

【0020】反対に、カバー体6が蝶番ピン40箇所を中心にして開くとき、押圧案内部39と係合ピン38との係合が解除され、前記ねじりコイルバネ62の付勢力にて、プラテンホルダ28は、それに取付けられたプラテン26がサーマルヘッド51の発熱素子53から離間し、押圧ローラ27がテープ送りローラ20の表面から離間する方向に回転するように構成されている。

【0021】なお、基板29フレーム21に締着固定するための締着ねじ56の位置をホルダ軸30に近接した位置に設定すれば、ホルダ軸30のフレーム21に対する配置のずれが少なくなり、押圧ホルダ31に対するプラテンホルダ28背面の配置関係にずれが生じにくくなるという効果を奏する。また、基板29が図8の二点鎖線で示すように、中高状、つまり基板29の長手方向の中途部がフレーム21の上面に対して浮き上がるように上向き凸湾曲状に予め変形させたものにすれば、締着ねじ56にて平板状のフレーム21上面に基板29を装着するとき、締着ねじ56にて、前記凸湾曲した基板29がフレーム21と平行状に押さえられる。その結果、基板29に立設したホルダ軸30はフレーム21上面と直角に延びるように立設できるという効果を奏する。

【0022】さらに、サーマルヘッド51への電圧印加用のフレキシブル配線板69の中途部は、ヘッド支持部材52の垂直板部52aに穿設された孔70を介して取付け片71の裏面に接着されており、基板29に穿設した挿通孔72及びフレーム21に穿設した挿通孔（図示せず）を介して下ケース2内方向に導かれる。次に、図4を参照しながら、前記カセット4から送り出されるテープ10を切断するための切断装置42について説明する。切断装置42は固定刃43と可動刃44と、該可動刃44を手動にて回転させるための側面視L字状の操作レバー45と、回転軸46等から構成されている。

【0023】なお、操作レバー45の長手一側端には、合成樹脂製の押しボタン48が装着されており、当該操作レバー45の他端とフレーム21との間に装架された付勢ばね（図示せず）のバネ力により、固定刃43の切断刃面に対して可動刃44の切断刃面が大きく拡開するように付勢されている。また、可動刃44が閉じる方向に移動するとき、操作レバー45と一体的に回転する合成樹脂製の作動体50のセンサアーム部に図示しないリリーフスイッチが当接して、印字動作中であればカセット4におけるテープ10の送り出しを禁止するようにテープ駆動モータ24の回転を停止させるように構成され

ている。

【0024】

【発明の作用・効果】以上に説明したように、本発明の印字テープ作成装置における印字部支持装置は、少なくとも印字用のテープを格納したカセットの収納部のフレームに、印字用のテープの搬送手段と、該テープに印字するためのサーマルヘッドと、該サーマルヘッドの発熱素子に対して接離するプラテンとを備えてなる印字テープ作成装置であって、前記プラテンが備えられたプラテンホルダを回転可能支持するためのホルダ軸を立設した基板に、前記サーマルヘッドが備えられたヘッド支持部材を予め位置調節して取付けし、前記基板をフレームにねじ締着固定するように構成したものであるから、基板に取付けしたヘッド支持部材上のサーマルヘッドの発熱素子の列の位置と、プラテンの押圧部との位置関係が、予め微調節により誤差なく設定できる。

【0025】従って、このように構成され、位置調節済みの基板をフレームにねじ締着すると言う簡単な作業のみで、テープへの印字品質を安定させることができる。特に、サーマルヘッドの破損等の印字部の交換時には、サーマルヘッド付きのヘッド支持部材と、ホルダ軸と基板がセットされたものを交換しても、前記サーマルヘッドの発熱素子の列とプラテンとの位置関係がずれないから、部品の交換作業が至極簡単に実行できるものでありながら、テープの印字品質を劣化することを防止できるという効果を奏するのである。

【図面の簡単な説明】

【図1】本発明の印字テープ作成装置の斜視図である。

【図2】カバー体を開いた状態の印字テープ作成装置の平面図である。

【図3】蓋体を省略したカセットの平面図である。

【図4】装置内の機械的機構部の平面図である。

【図5】印字部の一部切欠き平面図である。

【図6】プラテンホルダを除いた状態の印字部の一部切欠き正面図である。

【図7】ヘッド支持部材及び基板の斜視図である。

【図8】図5のVIII-VIII線矢視断面図である。

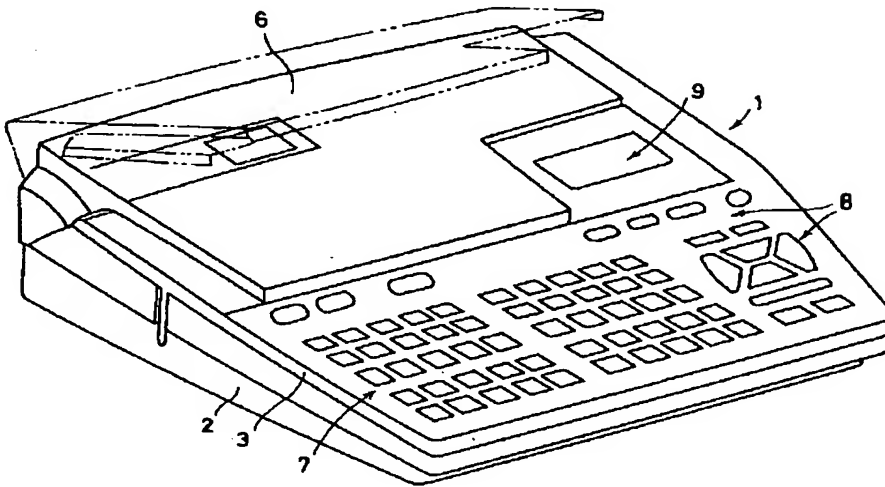
【符号の説明】

- |    |           |
|----|-----------|
| 1  | 印字テープ作成装置 |
| 2  | 下ケース      |
| 3  | 上ケース      |
| 4  | カセット      |
| 5  | 収納部       |
| 6  | カバー体      |
| 10 | テープ       |
| 11 | インクリボン    |
| 15 | 印字部       |
| 20 | テープ送りローラ  |
| 21 | フレーム      |
| 26 | プラテン      |

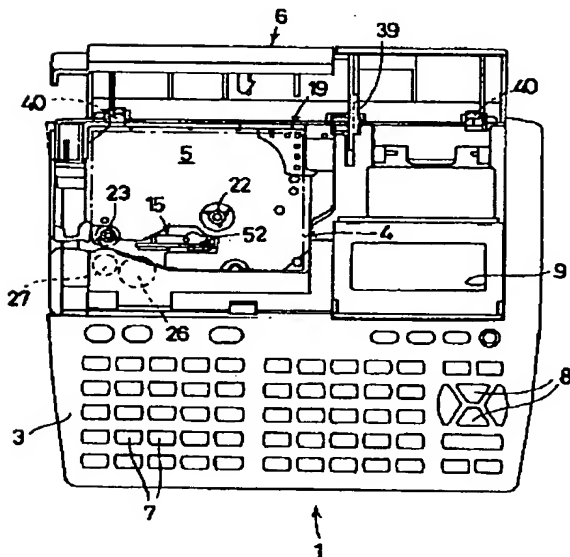
- |    |         |    |         |
|----|---------|----|---------|
| 27 | 押圧ローラ   | 52 | ヘッド支持部材 |
| 28 | プラテンホルダ | 53 | 発熱素子    |
| 29 | 基板      | 54 | 印字部支持装置 |
| 30 | ホルダ軸    | 56 | 締着ねじ    |
| 51 | サーマルヘッド |    |         |

05

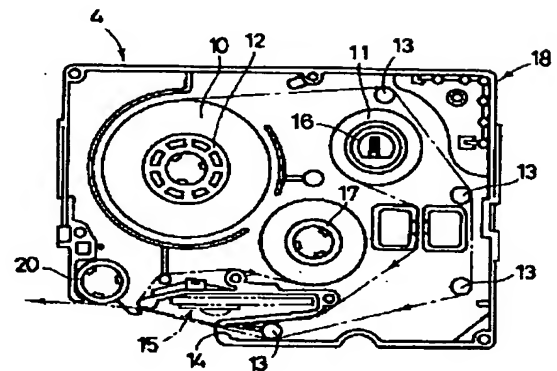
【図1】



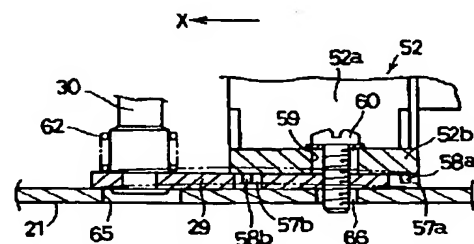
【図2】



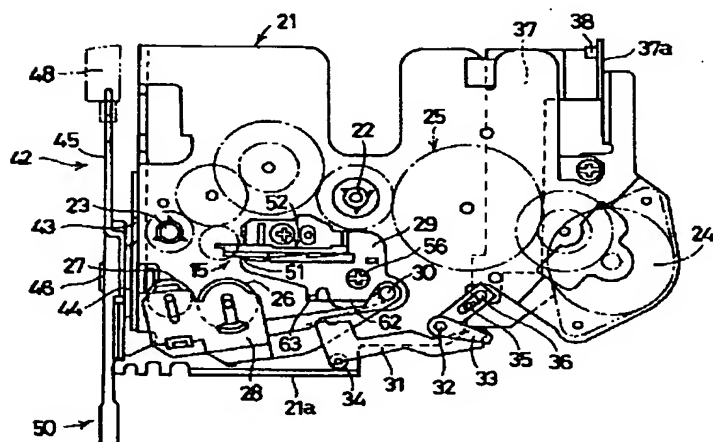
【図3】



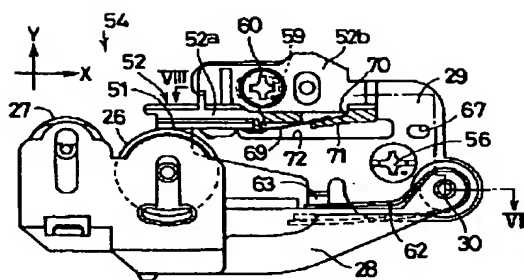
【図8】



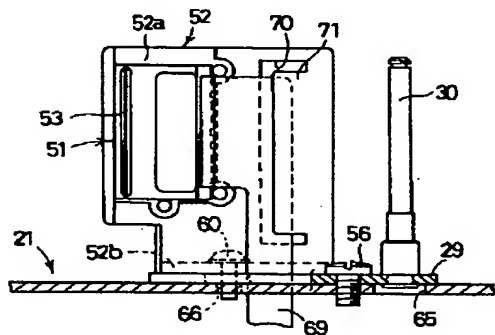
【図 4】



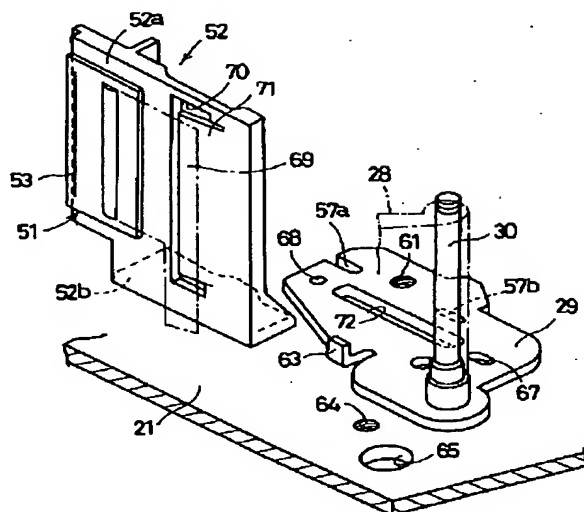
【図 5】



【図 6】



【図 7】



フロントページの続き

(51)Int.Cl.<sup>4</sup>

B 4 1 J 11/14  
32/00

識別記号

庁内整理番号

F I

技術表示箇所

Z